

1/22

SEQUENCE LISTING

<110> Japan Science and Technology Corporation

<120> Epilepsy-model animal

<130> 05F004PCT

<140> PCT/JP2005/003430

<141> 2005-03-05

<150> JP2004-62907

<151> 2004-03-05

<160> 5

<170> PatentIn version 3.1

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<211> 627

<212> PRT

<213> Homo sapiens

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Arg Ala His Ala Glu Glu Arg Leu Leu Lys Lys Leu Phe Ser Gly Tyr
35 40 45

Asn Lys Trp Ser Arg Pro Val Ala Asn Ile Ser Asp Val Val Leu Val
50 55 60

Arg Phe Gly Leu Ser Ile Ala Gln Leu Ile Asp Val Asp Glu Lys Asn
65 70 75 80

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Gln Met Met Thr Thr Asn Val Trp Val Lys Gln Glu Trp His Asp Tyr
85 90 95

Lys Leu Arg Trp Asp Pro Ala Asp Tyr Glu Asn Val Thr Ser Ile Arg
100 105 110

Ile Pro Ser Glu Leu Ile Trp Arg Pro Asp Ile Val Leu Tyr Asn Asn
115 120 125

Ala Asp Gly Asp Phe Ala Val Thr His Leu Thr Lys Ala His Leu Phe
130 135 140

His Asp Gly Arg Val Gln Trp Thr Pro Pro Ala Ile Tyr Lys Ser Ser
145 150 155 160

Cys Ser Ile Asp Val Thr Phe Phe Pro Phe Asp Gln Gln Asn Cys Thr
165 170 175

Met Lys Phe Gly Ser Trp Thr Tyr Asp Lys Ala Lys Ile Asp Leu Val
180 185 190

Asn Met His Ser Arg Val Asp Gln Leu Asp Phe Trp Glu Ser Gly Glu
195 200 205

Trp Val Ile Val Asp Ala Val Gly Thr Tyr Asn Thr Arg Lys Tyr Glu
210 215 220

Cys Cys Ala Glu Ile Tyr Pro Asp Ile Thr Tyr Ala Phe Val Ile Arg
225 230 235 240

Arg Leu Pro Leu Phe Tyr Thr Ile Asn Leu Ile Ile Pro Cys Leu Leu
245 250 255

Ile Ser Cys Leu Thr Val Leu Val Phe Tyr Leu Pro Ser Glu Cys Gly

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260	265	270
Glu Lys Ile Thr Leu Cys Ile Ser Val Leu Leu Ser Leu Thr Val Phe 275 280 285		
Leu Leu Leu Ile Thr Glu Ile Ile Pro Ser Thr Ser Leu Val Ile Pro 290 295 300		
Leu Ile Gly Glu Tyr Leu Leu Phe Thr Met Ile Phe Val Thr Leu Ser 305 310 315 320		
Ile Val Ile Thr Val Phe Val Leu Asn Val His His Arg Ser Pro Arg 325 330 335		
Thr His Thr Met Pro Thr Trp Val Arg Arg Val Phe Leu Asp Ile Val 340 345 350		
Pro Arg Leu Leu Leu Met Lys Arg Pro Ser Val Val Lys Asp Asn Cys 355 360 365		
Arg Arg Leu Ile Glu Ser Met His Lys Met Ala Ser Ala Pro Arg Phe 370 375 380		
Trp Pro Glu Pro Glu Gly Glu Pro Pro Ala Thr Ser Gly Thr Gln Ser 385 390 395 400		
Leu His Pro Pro Ser Pro Ser Phe Cys Val Pro Leu Asp Val Pro Ala 405 410 415		
Glu Pro Gly Pro Ser Cys Lys Ser Pro Ser Asp Gln Leu Pro Pro Gln 420 425 430		
Gln Pro Leu Glu Ala Glu Lys Ala Ser Pro His Pro Ser Pro Gly Pro 435 440 445		

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Cys Arg Pro Pro His Gly Thr Gln Ala Pro Gly Leu Ala Lys Ala Arg
450 455 460

Ser Leu Ser Val Gln His Met Ser Ser Pro Gly Glu Ala Val Glu Gly
465 470 475 480

Gly Val Arg Cys Arg Ser Arg Ser Ile Gln Tyr Cys Val Pro Arg Asp
485 490 495

Asp Ala Ala Pro Glu Ala Asp Gly Gln Ala Ala Gly Ala Leu Ala Ser
500 505 510

Arg Asn Thr His Ser Ala Glu Leu Pro Pro Pro Asp Gln Pro Ser Pro
515 520 525

Cys Lys Cys Thr Cys Lys Lys Glu Pro Ser Ser Val Ser Pro Ser Ala
530 535 540

Thr Val Lys Thr Arg Ser Thr Lys Ala Pro Pro Pro His Leu Pro Leu
545 550 555 560

Ser Pro Ala Leu Thr Arg Ala Val Glu Gly Val Gln Tyr Ile Ala Asp
565 570 575

His Leu Lys Ala Glu Asp Thr Asp Phe Ser Val Lys Glu Asp Trp Lys
580 585 590

Tyr Val Ala Met Val Ile Asp Arg Ile Phe Leu Trp Met Phe Ile Ile
595 600 605

Val Cys Leu Leu Gly Thr Val Gly Leu Phe Leu Pro Pro Trp Leu Ala
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Gly Met Ile
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Leu Pro Leu Leu Leu Leu Leu Gly Thr Gly Leu Leu Pro Ala Ser Ser
15 20 25 30

cac ata gag acc cgg gcc cat gcg gag gag cgg ctc ctg aag aga ctc 147
His Ile Glu Thr Arg Ala His Ala Glu Glu Arg Leu Leu Lys Arg Leu
35 40 45

ttc tcc get tac aac aag tgg tct cgg cca gta ggc aat atc tca gat 195
Phe Ser Gly Tyr Asn Lys Trp Ser Arg Pro Val Gly Asn Ile Ser Asp
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gtg gtc ctc gtc cgc ttt ggc ttg tcc att gct cag ctc att gac gtg 243
Val Val Leu Val Arg Phe Gly Leu Ser Ile Ala Gln Leu Ile Asp Val
65 70 75

gac gag aag aac cag atg atg aca acc aac gtg tgg gtg aag cag gag 291
Asp Glu Lys Asn Gln Met Met Thr Thr Asn Val Trp Val Lys Gln Glu
80 85 90

tgg cac gac tac aag ctg cgc tgg gac cct ggt gac tac gag aat gtc 339

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95					100					105					110	
acc	tcc	atc	cgc	atc	ccc	tct	gaa	ctc	atc	tgg	agg	cct	gac	atc	gtc	387
Thr	Ser	Ile	Arg	Ile	Pro	Ser	Glu	Leu	Ile	Trp	Arg	Pro	Asp	Ile	Val	
				115					120					125		
ctc	tac	aac	aat	gcg	gat	gga	gac	ttt	gca	gtc	acc	cac	ctg	acc	aag	435
Leu	Tyr	Asn	Asn	Ala	Asp	Gly	Asp	Phe	Ala	Val	Thr	His	Leu	Thr	Lys	
				130				135					140			
gcc	cac	ctg	ttc	tat	gac	gga	agg	gtg	cag	tgg	aca	ccc	cca	gcc	atc	483
Ala	His	Leu	Phe	Tyr	Asp	Gly	Arg	Val	Gln	Trp	Thr	Pro	Pro	Ala	Ile	
			145					150				155				
tat	aag	agc	tcc	tgc	agc	atc	gac	gtc	acc	ttc	ttc	ccc	ttt	gac	cag	531
Tyr	Lys	Ser	Ser	Cys	Ser	Ile	Asp	Val	Thr	Phe	Phe	Pro	Phe	Asp	Gln	
	160					165					170					
cag	aac	tgt	acc	atg	aag	ttt	gga	tcc	tgg	acc	tac	gac	aag	gcc	aag	579
Gln	Asn	Cys	Thr	Met	Lys	Phe	Gly	Ser	Trp	Thr	Tyr	Asp	Lys	Ala	Lys	
175					180				185						190	
att	gac	tta	gtg	agc	att	cat	agc	cgt	gtg	gac	caa	ctg	gac	ttc	tgg	627
Ile	Asp	Leu	Val	Ser	Ile	His	Ser	Arg	Val	Asp	Gln	Leu	Asp	Phe	Trp	
				195				200						205		
gaa	agt	ggg	gag	tgg	gtc	atc	gtg	gat	gct	gtg	ggc	acc	tac	aac	acc	675
Glu	Ser	Gly	Glu	Trp	Val	Ile	Val	Asp	Ala	Val	Gly	Thr	Tyr	Asn	Thr	
			210					215				220				
agg	aag	tac	gag	tgc	tgt	gcc	gag	atc	tat	cct	gac	atc	acc	tat	gcc	723
Arg	Lys	Tyr	Glu	Cys	Cys	Ala	Glu	Ile	Tyr	Pro	Asp	Ile	Thr	Tyr	Ala	
		225				230					235					
ttc	atc	atc	cga	cgc	ctg	ccg	cta	ttc	tac	acc	atc	aac	ctc	atc	atc	771
Phe	Ile	Ile	Arg	Arg	Leu	Pro	Leu	Phe	Tyr	Thr	Ile	Asn	Leu	Ile	Ile	
	240				245					250						
ccg	tgc	ctg	ctc	atc	tcc	tgt	ctc	acc	gtg	ctg	gtc	ttc	tat	ctg	cct	819
Pro	Cys	Leu	Leu	Ile	Ser	Cys	Leu	Thr	Val	Leu	Val	Phe	Tyr	Leu	Pro	
255					260				265					270		
tca	gag	tgt	ggc	gag	aag	gtc	aca	ctg	tgc	atc	tcg	gtg	ctg	ctt	tct	867
Ser	Glu	Cys	Gly	Glu	Lys	Val	Thr	Leu	Cys	Ile	Ser	Val	Leu	Leu	Ser	

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275	280	285	
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290	295	300	
ctg gtc atc ccg ctc atc ggc gag tac ctc ctc ttc acc atg atc ttc Leu Val Ile Pro Leu Ile Gly Glu Tyr Leu Leu Phe Thr Met Ile Phe			963
305	310	315	
gtc acc ctc tcc atc gtc atc acg gtc ttc gtg ctc aat gtg cac cac Val Thr Leu Ser Ile Val Ile Thr Val Phe Val Leu Asn Val His His			1011
320	325	330	
cgc tcg cca cgc aca cac acg atg ccc gcc tgg gtg cgt aga gtc ttc Arg Ser Pro Arg Thr His Thr Met Pro Ala Trp Val Arg Arg Val Phe			1059
335	340	345	350
ctg gac atc gtg cct cgc ctc ctc ttc atg aag cgc ccc tct gtg gtc Leu Asp Ile Val Pro Arg Leu Leu Phe Met Lys Arg Pro Ser Val Val			1107
355	360	365	
aaa gac aac tgc cgg aga ctt att gag tcc atg cac aag atg gcc aac Lys Asp Asn Cys Arg Arg Leu Ile Glu Ser Met His Lys Met Ala Asn			1155
370	375	380	
gcc ccc cgc ttc tgg cca gag cct gtg ggc gag ccc ggc atc ttg agt Ala Pro Arg Phe Trp Pro Glu Pro Val Gly Glu Pro Gly Ile Leu Ser			1203
385	390	395	
gac atc tgc aac caa ggt ctg tca cct gcc cca act ttc tgc aac ccc Asp Ile Cys Asn Gln Gly Leu Ser Pro Ala Pro Thr Phe Cys Asn Pro			1251
400	405	410	
acg gac aca gca gtc gag acc cag cct acg tgc agg tca ccc ccc ctt Thr Asp Thr Ala Val Glu Thr Gln Pro Thr Cys Arg Ser Pro Pro Leu			1299
415	420	425	430
gag gtc cct gac ttg aag aca tca gag gtt gag aag gcc agt ccc tgt Glu Val Pro Asp Leu Lys Thr Ser Glu Val Glu Lys Ala Ser Pro Cys			1347
435	440	445	
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450	455	460	

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caa gaa gca gca gaa gat ggc atc cgc tgc cgg tct cgg agt atc cag Gln Glu Ala Ala Glu Asp Gly Ile Arg Cys Arg Ser Arg Ser Ile Gln 480 485 490	1491
tac tgt gtt tcc caa gat gga gct gcc tcc ctg gct gac agc aag ccc Tyr Cys Val Ser Gln Asp Gly Ala Ala Ser Leu Ala Asp Ser Lys Pro 495 500 505 510	1539
acc agc tcc ccg acc tcc ctg aag gcc cgt cca tcc cag ctt ccc gtg Thr Ser Ser Pro Thr Ser Leu Lys Ala Arg Pro Ser Gln Leu Pro Val 515 520 525	1587
tca gac cag gcc tct cca tgc aaa tgc aca tgc aag gaa cca tct cct Ser Asp Gln Ala Ser Pro Cys Lys Cys Thr Cys Lys Glu Pro Ser Pro 530 535 540	1635
gtg tcc cca gtc act gtg ctc aag gcg gga ggc acc aaa gca cct ccc Val Ser Pro Val Thr Val Leu Lys Ala Gly Gly Thr Lys Ala Pro Pro 545 550 555	1683
caa cac ctg ccc ctg tca cca gcc ctg aca cgg gca gta gaa ggc gtc Gln His Leu Pro Leu Ser Pro Ala Leu Thr Arg Ala Val Glu Gly Val 560 565 570	1731
cag tac att gca gac cac ctc aag gca gaa gac act gac ttc tcg gtg Gln Tyr Ile Ala Asp His Leu Lys Ala Glu Asp Thr Asp Phe Ser Val 575 580 585 590	1779
aag gag gac tgg aaa tac gtg gcc atg gtc att gac cga atc ttc ctc Lys Glu Asp Trp Lys Tyr Val Ala Met Val Ile Asp Arg Ile Phe Leu 595 600 605	1827
tgg atg ttc atc att gtc tgc ctt ctg ggc act gtg gga ctc ttc ctg Trp Met Phe Ile Ile Val Cys Leu Leu Gly Thr Val Gly Leu Phe Leu 610 615 620	1875
cct ccc tgg ctg gct ggt atg atc tag ggacgtggtg gtgcccagct Pro Pro Trp Leu Ala Gly Met Ile 625 630	1922

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cccacatctc tgtagggccca tacgactcgt cagtcaccca catcttccaa accggctgac 1982
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Glu Thr Arg Ala His Ala Glu Glu Arg Leu Leu Lys Arg Leu Phe Ser
35 40 45

Gly Tyr Asn Lys Trp Ser Arg Pro Val Gly Asn Ile Ser Asp Val Val
50 55 60

Leu Val Arg Phe Gly Leu Ser Ile Ala Gln Leu Ile Asp Val Asp Glu
65 70 75 80

Lys Asn Gln Met Met Thr Thr Asn Val Trp Val Lys Gln Glu Trp His
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Asp Tyr Lys Leu Arg Trp Asp Pro Gly Asp Tyr Glu Asn Val Thr Ser
100 105 110

Ile Arg Ile Pro Ser Glu Leu Ile Trp Arg Pro Asp Ile Val Leu Tyr

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115	120	125
Asn Asn Ala Asp Gly Asp Phe Ala Val Thr His Leu Thr Lys Ala His		
130	135	140
Leu Phe Tyr Asp Gly Arg Val Gln Trp Thr Pro Pro Ala Ile Tyr Lys		
145	150	155 160
Ser Ser Cys Ser Ile Asp Val Thr Phe Phe Pro Phe Asp Gln Gln Asn		
	165	170 175
Cys Thr Met Lys Phe Gly Ser Trp Thr Tyr Asp Lys Ala Lys Ile Asp		
	180	185 190
Leu Val Ser Ile His Ser Arg Val Asp Gln Leu Asp Phe Trp Glu Ser		
	195	200 205
Gly Glu Trp Val Ile Val Asp Ala Val Gly Thr Tyr Asn Thr Arg Lys		
	210	215 220
Tyr Glu Cys Cys Ala Glu Ile Tyr Pro Asp Ile Thr Tyr Ala Phe Ile		
	225	230 235 240
Ile Arg Arg Leu Pro Leu Phe Tyr Thr Ile Asn Leu Ile Ile Pro Cys		
	245	250 255
Leu Leu Ile Ser Cys Leu Thr Val Leu Val Phe Tyr Leu Pro Ser Glu		
	260	265 270
Cys Gly Glu Lys Val Thr Leu Cys Ile Ser Val Leu Leu Ser Leu Thr		
	275	280 285
Val Phe Leu Leu Leu Ile Thr Glu Ile Ile Pro Ser Thr Ser Leu Val		
	290	295 300

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Ile Pro Leu Ile Gly Glu Tyr Leu Leu Phe Thr Met Ile Phe Val Thr
305 310 315 320

Leu Ser Ile Val Ile Thr Val Phe Val Leu Asn Val His His Arg Ser
325 330 335

Pro Arg Thr His Thr Met Pro Ala Trp Val Arg Arg Val Phe Leu Asp
340 345 350

Ile Val Pro Arg Leu Leu Phe Met Lys Arg Pro Ser Val Val Lys Asp
355 360 365

Asn Cys Arg Arg Leu Ile Glu Ser Met His Lys Met Ala Asn Ala Pro
370 375 380

Arg Phe Trp Pro Glu Pro Val Gly Glu Pro Gly Ile Leu Ser Asp Ile
385 390 395 400

Cys Asn Gln Gly Leu Ser Pro Ala Pro Thr Phe Cys Asn Pro Thr Asp
405 410 415

Thr Ala Val Glu Thr Gln Pro Thr Cys Arg Ser Pro Pro Leu Glu Val
420 425 430

Pro Asp Leu Lys Thr Ser Glu Val Glu Lys Ala Ser Pro Cys Pro Ser
435 440 445

Pro Gly Ser Cys Pro Pro Pro Lys Ser Ser Ser Gly Ala Pro Met Leu
450 455 460

Ile Lys Ala Arg Ser Leu Ser Val Gln His Val Pro Ser Ser Gln Glu
465 470 475 480

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Ala Ala Glu Asp Gly Ile Arg Cys Arg Ser Arg Ser Ile Gln Tyr Cys
485 490 495

Val Ser Gln Asp Gly Ala Ala Ser Leu Ala Asp Ser Lys Pro Thr Ser
500 505 510

Ser Pro Thr Ser Leu Lys Ala Arg Pro Ser Gln Leu Pro Val Ser Asp
515 520 525

Gln Ala Ser Pro Cys Lys Cys Thr Cys Lys Glu Pro Ser Pro Val Ser
530 535 540

Pro Val Thr Val Leu Lys Ala Gly Gly Thr Lys Ala Pro Pro Gln His
545 550 555 560

Leu Pro Leu Ser Pro Ala Leu Thr Arg Ala Val Glu Gly Val Gln Tyr
565 570 575

Ile Ala Asp His Leu Lys Ala Glu Asp Thr Asp Phe Ser Val Lys Glu
580 585 590

Asp Trp Lys Tyr Val Ala Met Val Ile Asp Arg Ile Phe Leu Trp Met
595 600 605

Phe Ile Ile Val Cys Leu Leu Gly Thr Val Gly Leu Phe Leu Pro Pro
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Trp Leu Ala Gly Met Ile
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Met Glu Ile Gly
1ggc tcc ggg gcg ccg ccg ccg ctg ctg ctc ctg ccg ctc ctg ctg ctc 164
Gly Ser Gly Ala Pro Pro Pro Leu Leu Leu Leu Pro Leu Leu Leu Leu
5 10 15 20tta ggg acc ggc ctc ttg cct gct agc agc cac ata gag acc cgg gcc 212
Leu Gly Thr Gly Leu Leu Pro Ala Ser Ser His Ile Glu Thr Arg Ala
25 30 35cat gcg gag gag ccg ctc ctg aag aga ctc ttc tct ggc tac aac aag 260
His Ala Glu Glu Arg Leu Leu Lys Arg Leu Phe Ser Gly Tyr Asn Lys
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Trp Ser Arg Pro Val Ala Asn Ile Ser Asp Val Val Leu Val Arg Phe
55 60 65ggc ttg tcg att gct cag ctc att gat gtg gat gag aaa aac cag atg 356
Gly Leu Ser Ile Ala Gln Leu Ile Asp Val Asp Glu Lys Asn Gln Met
70 75 80atg acg acc aac gtg tgg gtg aag cag gag tgg cat gac tac aaa ctg 404
Met Thr Thr Asn Val Trp Val Lys Gln Glu Trp His Asp Tyr Lys Leu
85 90 95 100cgc tgg gac cct ggt gac tac gag aat gtc acc tcc atc cgc atc cca 452
Arg Trp Asp Pro Gly Asp Tyr Glu Asn Val Thr Ser Ile Arg Ile Pro
105 110 115

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tct gaa ctc atc tgg agg cct gac atc gtc ctc tac aac aac gcg gac Ser Glu Leu Ile Trp Arg Pro Asp Ile Val Leu Tyr Asn Asn Ala Asp 120 125 130	500
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atc gac gtc acc ttc ttc ccc ttc gac cag cag aac tgt acc atg aag Ile Asp Val Thr Phe Phe Pro Phe Asp Gln Gln Asn Cys Thr Met Lys 165 170 175 180	644
ttt ggg tcc tgg acc tac gac aag gcc aag att gac ttg gtg agc atg Phe Gly Ser Trp Thr Tyr Asp Lys Ala Lys Ile Asp Leu Val Ser Met 185 190 195	692
cac agc cgt gtg gac caa ctg gac ttc tgg gaa agt ggg gag tgg gtc His Ser Arg Val Asp Gln Leu Asp Phe Trp Glu Ser Gly Glu Trp Val 200 205 210	740
att gtg gat gcc gtg ggc acc tac aac acc agg aag tat gaa tgc tgt Ile Val Asp Ala Val Gly Thr Tyr Asn Thr Arg Lys Tyr Glu Cys Cys 215 220 225	788
gcc gag atc tat cct gac atc acc tac gcc ttc atc atc cgc cga ctg Ala Glu Ile Tyr Pro Asp Ile Thr Tyr Ala Phe Ile Ile Arg Arg Leu 230 235 240	836
cca ctg ttc tac acc atc aac ctt atc atc ccg tgc ctg ctc atc tcc Pro Leu Phe Tyr Thr Ile Asn Leu Ile Ile Pro Cys Leu Leu Ile Ser 245 250 255 260	884
tgc ctc acc gtg ctg gtc ttc tat ctg ccc tcg gag tgc ggc gag aag Cys Leu Thr Val Leu Val Phe Tyr Leu Pro Ser Glu Cys Gly Glu Lys 265 270 275	932
gtc acg ctg tgc atc tcg gtg ctg ctt tct ctc acc gtc ttc ctg ctg Val Thr Leu Cys Ile Ser Val Leu Leu Ser Leu Thr Val Phe Leu Leu 280 285 290	980

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ctc atc acc gag atc atc ccg tcc acc tgc ctg gtc atc ccg ctc atc Leu Ile Thr Glu Ile Ile Pro Ser Thr Ser Leu Val Ile Pro Leu Ile 295 300 305	1028
ggc gag tac ctg ctc ttc acc atg atc ttc gtc acc ctc tcc att gtc Gly Glu Tyr Leu Leu Phe Thr Met Ile Phe Val Thr Leu Ser Ile Val 310 315 320	1076
atc acg gtc ttc gtg ctc aat gta cac cac cgc tca cca cgc aca cac Ile Thr Val Phe Val Leu Asn Val His His Arg Ser Pro Arg Thr His 325 330 335 340	1124
acc atg ccc gcc tgg gtg cgc aga gtc ttc ctg gac att gtg ccc cgt Thr Met Pro Ala Trp Val Arg Arg Val Phe Leu Asp Ile Val Pro Arg 345 350 355	1172
ctc ctc ttc atg aag cgc cca tct gtg gtc aaa gac aac tgc cgg aga Leu Leu Phe Met Lys Arg Pro Ser Val Val Lys Asp Asn Cys Arg Arg 360 365 370	1220
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gag cct gag agt gag ccc ggc atc ttg ggt gac atc tgc aac caa ggc Glu Pro Glu Ser Glu Pro Gly Ile Leu Gly Asp Ile Cys Asn Gln Gly 390 395 400	1316
ctg tca cct gcc cca act ttc tgc aac cgc atg gac aca gca gtc gag Leu Ser Pro Ala Pro Thr Phe Cys Asn Arg Met Asp Thr Ala Val Glu 405 410 415 420	1364
acc cag cct aca tgc agg tca ccc tcc cac aag gtc cct gac ttg aag Thr Gln Pro Thr Cys Arg Ser Pro Ser His Lys Val Pro Asp Leu Lys 425 430 435	1412
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Ile Arg Cys Arg Ser Arg Ser Ile Gln Tyr Cys Val Ser Gln Asp Gly	
485 490 495 500	
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Ala Ala Ser Leu Thr Glu Ser Lys Pro Thr Gly Ser Pro Ala Ser Leu	
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Lys Thr Arg Pro Ser Gln Leu Pro Val Ser Asp Gln Thr Ser Pro Cys	
520 525 530	
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Lys Cys Thr Cys Lys Glu Pro Ser Pro Val Ser Pro Ile Thr Val Leu	
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Lys Ala Gly Gly Thr Lys Ala Pro Pro Gln His Leu Pro Leu Ser Pro	
550 555 560	
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Ala Leu Thr Arg Ala Val Glu Gly Val Gln Tyr Ile Ala Asp His Leu	
565 570 575 580	
aag gca gaa gac aca gac ttc tgc gtg aag gag gac tgg aaa tac gtg	1892
Lys Ala Glu Asp Thr Asp Phe Ser Val Lys Glu Asp Trp Lys Tyr Val	
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gcc atg gtc att gac cga atc ttc ctc tgg atg ttc atc att gtc tgc	1940
Ala Met Val Ile Asp Arg Ile Phe Leu Trp Met Phe Ile Ile Val Cys	
600 605 610	
ctt ctg ggc act gtg gga ctc ttc ctg cct cca tgg ttg gct ggt atg	1988
Leu Leu Gly Thr Val Gly Leu Phe Leu Pro Pro Trp Leu Ala Gly Met	
615 620 625	
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20 25 30

Glu Thr Arg Ala His Ala Glu Glu Arg Leu Leu Lys Arg Leu Phe Ser
35 40 45

Gly Tyr Asn Lys Trp Ser Arg Pro Val Ala Asn Ile Ser Asp Val Val
50 55 60

Leu Val Arg Phe Gly Leu Ser Ile Ala Gln Leu Ile Asp Val Asp Glu
65 70 75 80

Lys Asn Gln Met Met Thr Thr Asn Val Trp Val Lys Gln Glu Trp His
85 90 95

Asp Tyr Lys Leu Arg Trp Asp Pro Gly Asp Tyr Glu Asn Val Thr Ser
100 105 110

Ile Arg Ile Pro Ser Glu Leu Ile Trp Arg Pro Asp Ile Val Leu Tyr
115 120 125

Asn Asn Ala Asp Gly Asp Phe Ala Val Thr His Leu Thr Lys Ala His
130 135 140

Leu Phe Tyr Asp Gly Arg Val Gln Trp Thr Pro Pro Ala Ile Tyr Lys
145 150 155 160

Ser Ser Cys Ser Ile Asp Val Thr Phe Phe Pro Phe Asp Gln Gln Asn
165 170 175

Cys Thr Met Lys Phe Gly Ser Trp Thr Tyr Asp Lys Ala Lys Ile Asp

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180	185	190
Leu Val Ser Met His Ser Arg Val Asp Gln Leu Asp Phe Trp Glu Ser 195 200 205		
Gly Glu Trp Val Ile Val Asp Ala Val Gly Thr Tyr Asn Thr Arg Lys 210 215 220		
Tyr Glu Cys Cys Ala Glu Ile Tyr Pro Asp Ile Thr Tyr Ala Phe Ile 225 230 235 240		
Ile Arg Arg Leu Pro Leu Phe Tyr Thr Ile Asn Leu Ile Ile Pro Cys 245 250 255		
Leu Leu Ile Ser Cys Leu Thr Val Leu Val Phe Tyr Leu Pro Ser Glu 260 265 270		
Cys Gly Glu Lys Val Thr Leu Cys Ile Ser Val Leu Leu Ser Leu Thr 275 280 285		
Val Phe Leu Leu Leu Ile Thr Glu Ile Ile Pro Ser Thr Ser Leu Val 290 295 300		
Ile Pro Leu Ile Gly Glu Tyr Leu Leu Phe Thr Met Ile Phe Val Thr 305 310 315 320		
Leu Ser Ile Val Ile Thr Val Phe Val Leu Asn Val His His Arg Ser 325 330 335		
Pro Arg Thr His Thr Met Pro Ala Trp Val Arg Arg Val Phe Leu Asp 340 345 350		
Ile Val Pro Arg Leu Leu Phe Met Lys Arg Pro Ser Val Val Lys Asp 355 360 365		

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Asn Cys Arg Arg Leu Ile Glu Ser Met His Lys Met Ala Asn Ala Pro
370 375 380

Arg Phe Trp Pro Glu Pro Glu Ser Glu Pro Gly Ile Leu Gly Asp Ile
385 390 395 400

Cys Asn Gln Gly Leu Ser Pro Ala Pro Thr Phe Cys Asn Arg Met Asp
405 410 415

Thr Ala Val Glu Thr Gln Pro Thr Cys Arg Ser Pro Ser His Lys Val
420 425 430

Pro Asp Leu Lys Thr Ser Glu Val Glu Lys Ala Ser Pro Cys Pro Ser
435 440 445

Pro Gly Ser Cys His Pro Pro Asn Ser Ser Gly Ala Pro Val Leu Ile
450 455 460

Lys Ala Arg Ser Leu Ser Val Gln His Val Pro Ser Ser Gln Glu Ala
465 470 475 480

Ala Glu Gly Ser Ile Arg Cys Arg Ser Arg Ser Ile Gln Tyr Cys Val
485 490 495

Ser Gln Asp Gly Ala Ala Ser Leu Thr Glu Ser Lys Pro Thr Gly Ser
500 505 510

Pro Ala Ser Leu Lys Thr Arg Pro Ser Gln Leu Pro Val Ser Asp Gln
515 520 525

Thr Ser Pro Cys Lys Cys Thr Cys Lys Glu Pro Ser Pro Val Ser Pro
530 535 540

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Ile Thr Val Leu Lys Ala Gly Gly Thr Lys Ala Pro Pro Gln His Leu
545 550 555 560

Pro Leu Ser Pro Ala Leu Thr Arg Ala Val Glu Gly Val Gln Tyr Ile
565 570 575

Ala Asp His Leu Lys Ala Glu Asp Thr Asp Phe Ser Val Lys Glu Asp
580 585 590

Trp Lys Tyr Val Ala Met Val Ile Asp Arg Ile Phe Leu Trp Met Phe
595 600 605

Ile Ile Val Cys Leu Leu Gly Thr Val Gly Leu Phe Leu Pro Pro Trp
610 615 620

Leu Ala Gly Met Ile
625

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